

FIGURE 1A
(PRIOR ART)

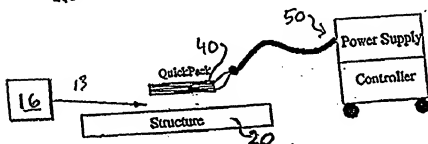


FIGURE 1B

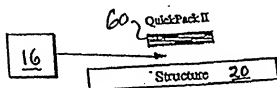


FIGURE 1C

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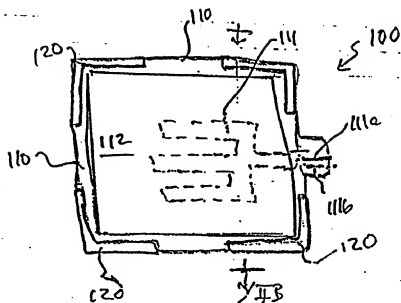


FIGURE 2A

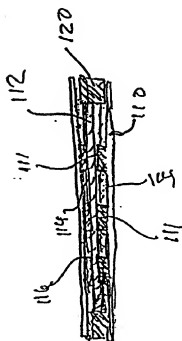


FIGURE 2B

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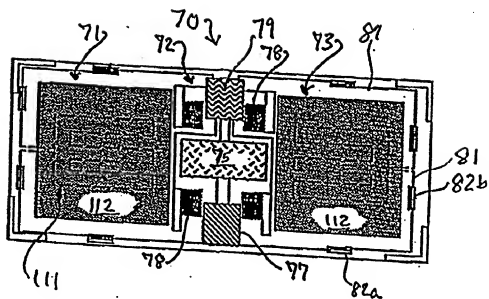
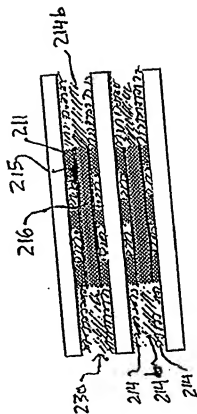
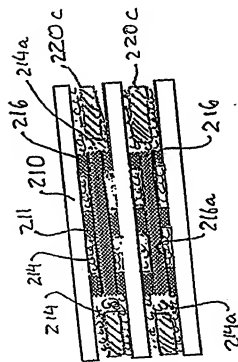


FIGURE 2C

FIGURE 3

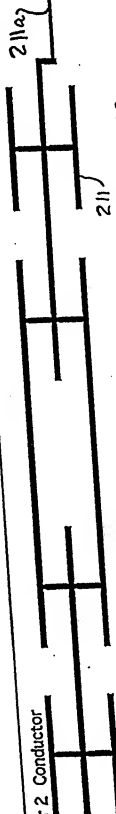


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Layer 1 Polyimide

210

Layer 2 Conductor



Layer 3 Spacer/ Piezo

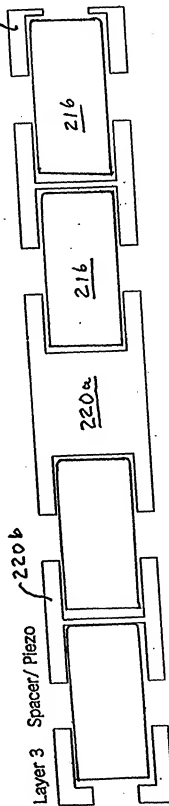


FIGURE 5

Cross Section

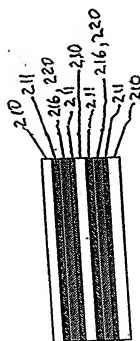


FIGURE 5A

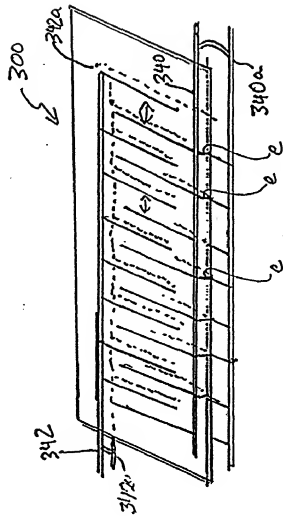


FIGURE 6

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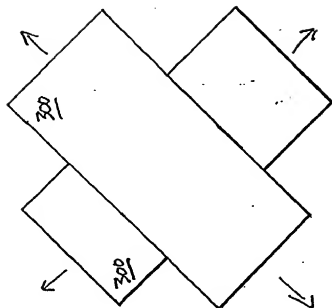


FIGURE 7

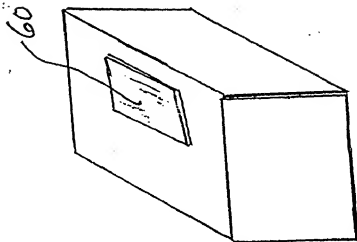


FIGURE 8A

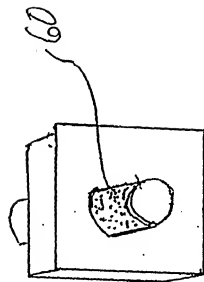
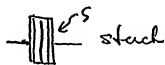


FIGURE 8B

FIGURE 9

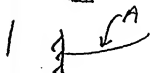
9(a) - 9(h)
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Single actuators:



stuck

9(a)



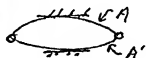
bender (cantilever) 9(b)



pin-pin bender

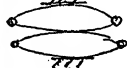
9(c)

Multiple actuators:



pin-pin hollows

9(d)



multiple pin-pin hollows 9(e)

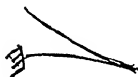


pin-pin with lever

9(f)



pin-pin with cantilever bender 9(g)



out of back cantilever

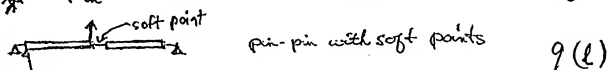
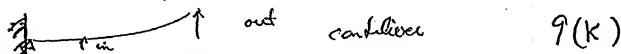
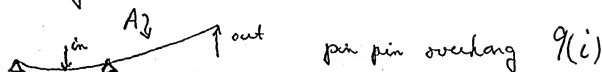
9(h)

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FIGURE 9

9(i) - 9(q)
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in conjunction with bender-levers:

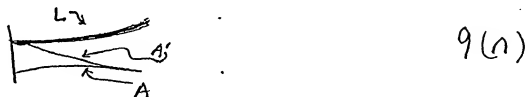


multiple activator / bender levers:

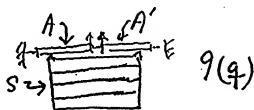
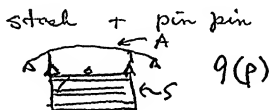
cantilever bender + cantilever lever



out of back cantilever bender + cantilever lever



pin pin bellows + pin pin overhang



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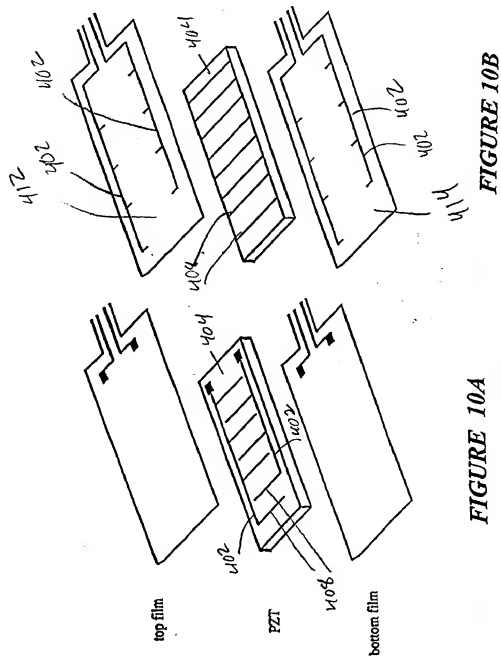
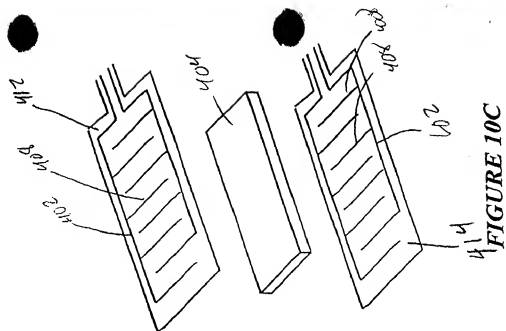


FIGURE 10A

FIGURE 10B

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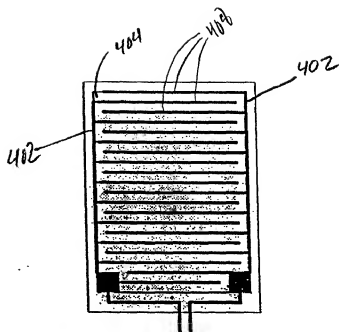


FIGURE 11A

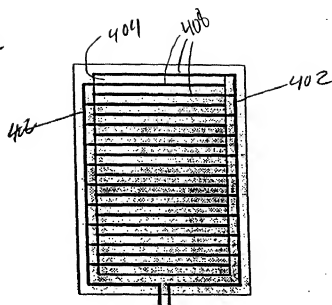
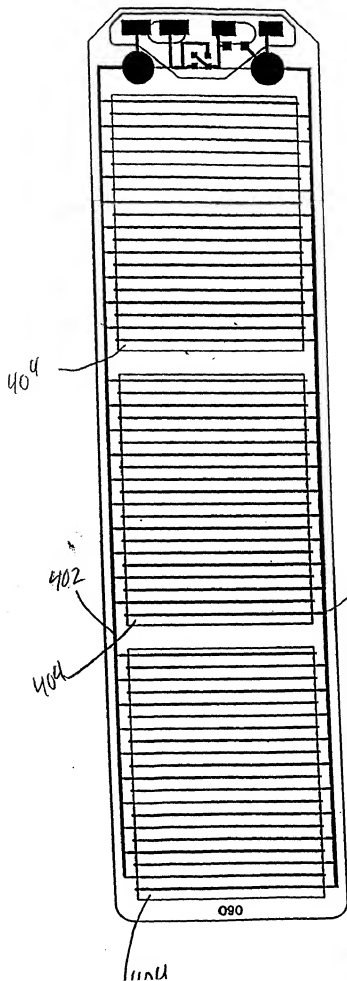


FIGURE 11B

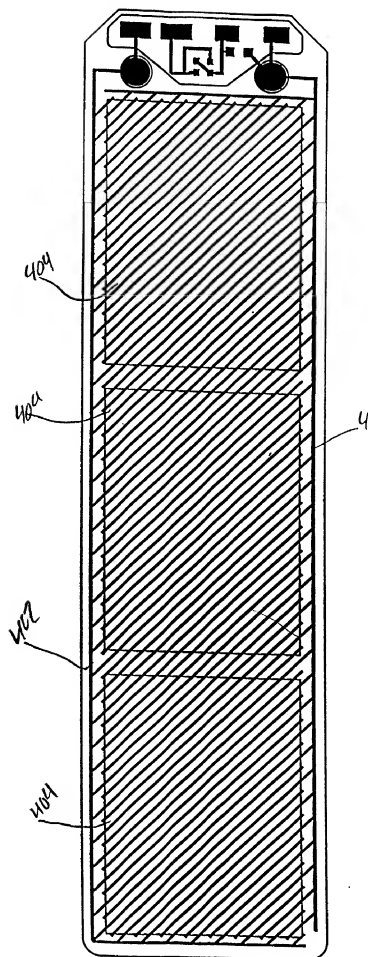
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FIGURE 12



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FIGURE 13



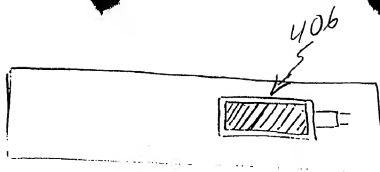


FIGURE 14A

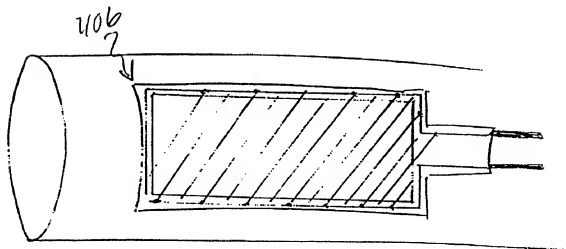


FIGURE 14B

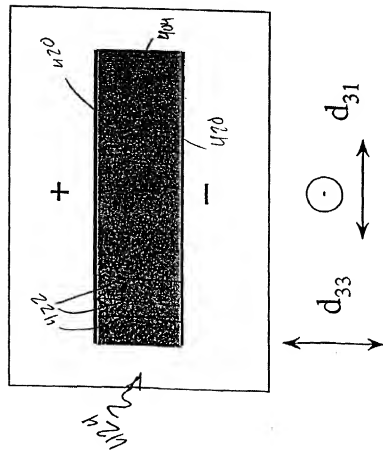


FIGURE 15A

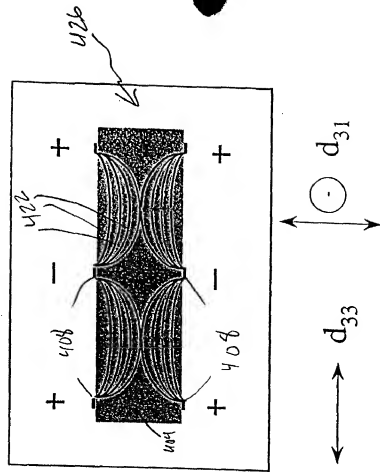


FIGURE 15B

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66/240.2E100E60

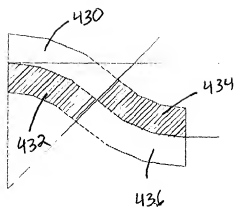


FIGURE 16

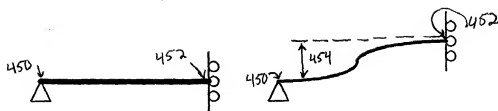


FIGURE 17